



UNIVERSITY OF LEEDS

The
Alan Turing
Institute

Agent Based Modelling

**MODELLING THE DYNAMICS OF POLICE DEMAND AND
RESOURCING OVER SPACE AND TIME**

Agent Based Modelling?

An agent based model is a computational model that allows the user to simulate autonomous **entities** with various characteristics within a defined **environment**.



Agent name: Bob

ID: 2011923

Height: 2m

Hates: Cookies, Burgers, Trump..



Contains all resources where the time to mobilise is less than the number of cycles = (days) of the incident.



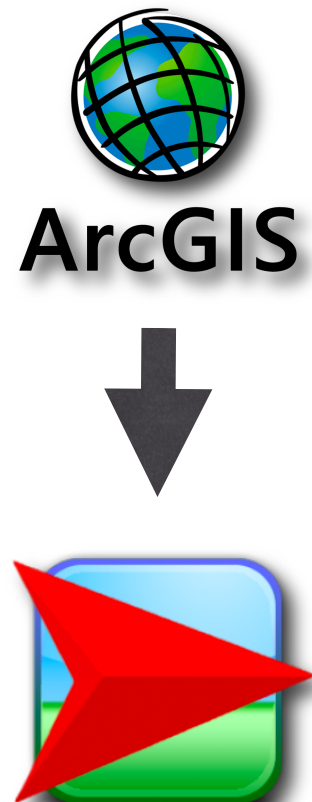
delete from M all resource



List M = List M - resource A

Subtract 1 from all times-to-mobilise of resources in X

Model execution



Model execution interface showing a map of the UK with a network of nodes and edges, and various control panels.

ZOOM CONTROLS

- zoom-in
- zoom-out
- zoom-std
- zoom 0.50

CONTROLS

- move-up
- move-left
- move-right
- move-down
- shift 6

DATASET INFORMATION

- print dataset
- print labels

MAP CONTROLS

- draw

1) click <load patch data> to merge the dataset (polygon average) = centroid with the patch variables

radius 4.0

number_of_crimes 2

path-draw

Map Interface: A map of the United Kingdom showing a network of nodes (black dots) and edges (grey lines). Red dots are scattered across the map, representing crime incidents. The map is surrounded by a white border.

Buttons: setup, go, watch crime, reset perspective

Resource Requirements:

units of resource required for incident 1	total resources provided
0	0
units of resource required for incident 2	total resources provided
0	0

Command Center

observer>

Thank you!



```
../SedarOlmez94 -> police_simulation_project-PSP- -> tree -> master -> project
```